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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,461	12/03/2003	Paul G. Wilson	24170759.2	5873

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PATENT DEPARTMENT
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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/726,461	Applicant(s) WILSON ET AL.	
	Examiner Jennifer A. Boyd	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 26-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 23, 2005 has been entered. The Applicant's Amendments and Accompanying Remarks, filed May 23, 2005, have been entered and have been carefully considered. Claims 1 and 14 are amended, claims 26 – 50 are withdrawn and claims 1 – 50 are pending. In view of Applicant's amendment requiring that the second plurality of fibers are dispersed in "physical contact" with the first plurality of fibers, the Examiner withdraws all previously set forth rejections as detailed in Office Action dated January 13, 2005. After another search was conducted, additional prior art has been found which renders in the invention as currently claimed unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the

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claim(s) in independent form. Dependent claim 20 requires that the fibers of the first plurality are horizontally dispersed in linear formations extending in one or more predetermined directions; this limitation is already required by the independent claim.

Claim Rejections - 35 USC § 102

4. Claims 1, 4 – 5, 7 – 10, 14, 15 – 16, 18 – 20 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Shannon et al. (US 4,278,720).

Shannon is directed a bonded mat or directionally oriented strands and randomly oriented strands (Title).

As to claims 1, 14 and 20, Shannon teaches a mat of directionally oriented strands held together by randomly oriented fibers and all of which are permanently held together by a binder (Abstract). See Figures 1 and 3. It should be noted that the directionally oriented strands are oriented in one or more predetermined direction as required by the Applicant.

As to claims 4 and 15, Shannon teaches that the mat comprises glass fibers (column 2, lines 10 – 25).

As to claims 5 and 16, Shannon teaches that the glass fibers have a diameter of less than 0.0008 inch and preferably approximately 0.00036 inch (column 3, lines 15 – 20).

As to claim 7, Shannon teaches that the binder can be sprayed and saturate the entire mat to create a bonded mat (column 3, lines 40 - 68).

As to claims 8 and 25, Shannon teaches that the binder is present in the amount of 8 – 15% by weight (column 3, lines 25 – 40).

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As to claims 9 – 10 and 18 - 19, Shannon teaches that the binder can comprise organic resins such as acrylic resins (column 8, lines 15 – 35). It should be noted that Shannon does not specifically teach the use of an acrylic latex or an acrylic emulsion. However, it is submitted that the final product would comprise a dried resin and the initial form of the resin (i.e. latex or emulsion) would be irrelevant. The burden is upon the Applicant to prove otherwise.

5. Claims 1 – 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Corrons (US 6,355,584).

Corrons is directed to a complex fabric having layers made from glass fibers (Title).

As to claim 1, Corrons teaches a fabric comprising a layer of chopped glass-fiber strand mat, at least one layer of glass rovings and a porous tissue-paper backing (Abstract). See Figure 3. The Examiner equates the at least one layer of glass rovings to Applicant's "first layer of directionally aligned nonwoven fibers" and the chopped glass mat to Applicant's "second layer of randomly dispersed nonwoven fibers".

As to claims 2 - 3, Corrons shows in Figure 3 that layers 22, 28, 30 and 32 are directional layers which cross at various locations. The Examiner has equated layers 22, 28, 30 and 32 to Applicant's "first layer". It should be noted that in the final product the separate directional layers are attached together taking away their identity as separate layers.

As to claim 4, Corrons teaches that the fabric is made of glass fibers (Abstract).

As to claim 6, Corrons teaches that the random mat fibers and the roving fibers can be staple fibers (columns 3 – 4). According to the definition of staple fibers, the fibers of Corrons would meet Applicant's length requirements.

Claim Rejections - 35 USC § 103

6. Claims 6, 11 – 13, 17 and 21 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al. (US 4,278,720).

As to claims 6, 11 – 13, 17 and 21 – 24, Shannon discloses the claimed invention except for that the fibers have a length ranging from 0.10 inches to about 1.5 inches as required by claims 6 and 17, the first layer comprises a thickness of about 50% of the total thickness of the fiber material as required by claims 11 and 21, the fiber material has a weight of 1.6 lbs/sq foot as required by claims 12 and 22, the overall thickness of the fiber material is about 0.035 inches and the thickness of the first nonwoven layer is about 0.002 to 0.010 inches as required by claims 13 and 23, and the first and second pluralities of fibers are both horizontally dispersed to a substantially uniform thickness as required by claim 24. It should be noted that fiber length, layer thickness, layer thickness uniformity and layer weight are result effective variables. As the fiber length decreases, the material becomes more flexible and fragile. As the thickness and weight of the first layer increases, the material becomes stiffer. As the thickness becomes more uniform, the material has superior mechanical properties. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the material having fibers of a length ranging from 0.10 inches to about 1.5 inches as required by claims 6 and 17, a first layer comprises a thickness of about 50% of the total thickness of the fiber material as required by claims 11 and 21, the fiber material has a weight of 1.6 lbs/sq foot as required by claims 12 and 22, the overall thickness of the fiber material is about 0.035 inches and the thickness of the first nonwoven layer is about 0.002 to 0.010 inches as required by claims 13 and 23, and the first and

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second pluralities of fibers are both horizontally dispersed to a substantially uniform thickness as required by claim 24 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the fiber length, layer thickness and uniformity and the layer weight in order to create a strong, thin and flexible composite suitable for roofing applications.

As to claims 12 and 22, although Shannon does not explicitly teach the claimed the tear strength under the Elmendorf Tear Test of about 393 g mean tear, it is reasonable to presume that the above property is inherent. Support for said presumption is found in the use of like materials (i.e. a mat of directionally oriented strands held together by randomly oriented fibers and all of which are permanently held together by a binder) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Shannon product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Response to Arguments

7. Applicant's arguments with respect to claims 1 - 25 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer Boyd
August 4, 2005



Ula C. Ruddock
Primary Examiner
Tech Center 1700